

# LSC Responses to TIS REDLINE Comments



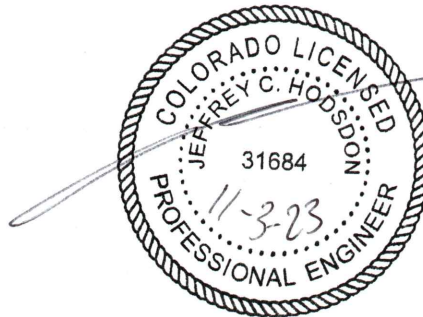
LSC TRANSPORTATION CONSULTANTS, INC.  
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## Nabulsi-Abushaban Subdivision Traffic Impact Study (LSC #S224340) November 3, 2023

Please add "PCD File No. MS2211"<sup>1</sup>

### Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



### Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

*Taher Nabulsi*<sup>2</sup>

11/6/2023<sup>3</sup>

Date

# LSC Responses to TIS REDLINE Comments

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Page: 1

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☰ Number: 1 Author: Carlos Subject: Text Box Date: 12/14/2023 12:51:05 PM -07'00'

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Please add "PCD File No. MS2211"

↻ Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:29:08 AM

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LSC Response: Added as requested.

☰ Number: 2 Author: tahe nabulsi Date: 11/6/2023 1:16:33 PM -07'00'

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Tahe Nabulsi

☰ Number: 3 Author: tahe nabulsi Date: 11/6/2023 1:16:10 PM -07'00'

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11/6/2023

Please revise to "Rural Major Collector" and clarify this classification is from the 2040 Major Transportation Corridors Plan.

Page 3

Per ECM Administrator Old Ranch Road is classified as a Rural Local Gravel road presently. Intersection spacing is 330 feet. Please revise statement and analysis to meet intersection spacing for a rural local gravel road.

Per the El Paso County *Engineering Criteria Manual (ECM)*, intersections on a roadway classified as a "Rural Collector" are required to have a minimum spacing of ¼ mile. Intersection spacing for Urban Collectors is 330 or 660 feet, depending on the situation. Old Ranch Road currently functions like a local roadway rather than a collector. In the future, should Old Ranch Road be connected to Milam Road/Union Boulevard to the west, this intersection would meet ECM standards for an Urban Collector. The property does not have sufficient frontage for ¼ mile intersection spacing (Rural Major Collector standard) from Black Forest Road, nor would ¼ mile be necessary.

#### OTHER AREA PARCELS ADJACENT TO OLD RANCH ROAD

- The Black Forest Saddle Club also accesses Old Ranch Road. This is an existing land use.
- The Wolf Ranch Master Plan (City of Colorado Springs) along the south side of Old Ranch Road will not add a vehicular access to Old Ranch Road.

This report also considers potential future trip generation by other area potential future land uses:

- Koinonia Ranch proposed Subdivision (Minor) – 6170 Old Ranch Road (EDARP Nos. [SP214](#) and [SF2135](#)) has the potential to add five lots which would access Old Ranch Road west of this site.
- The vacant lot west of Koinonia Ranch site.

#### INTERSECTION SIGHT DISTANCE

##### Entering Sight Distance

State what the criteria requires for this intersection.

Intersection entering sight distance at the proposed site-access (private street) location on Old Ranch Road shown on the site plan would meet sight-distance requirements in *ECM* Table 2-21. The following are the existing sight-distance measurements. These measurements were conducted in the field by LSC. The line of sight is from a driver's eye height of 3.5 feet to an approaching vehicle height of 3.5 feet.

- Site Access/Old Ranch Road intersection:
- At least 850 feet looking west from the site access location.
- 660 feet east to the intersection of Black Forest Road/Old Ranch Road.

Please refer to Figure 3 which shows the sight-distance analysis. The lines-of-sight for the access point intersection/private road will need to be kept clear of any sight-distance obstructions. This includes landscaping, signage, etc. proposed for the residential development.

##### Stopping Sight Distance to Downstream Intersection

Stopping sight distance along Old Ranch Road approaching the proposed site access would meet stopping sight-distance requirements in *ECM* Table 2-17 (or 2-18 for grades over 3% - not

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Number: 1 Author: Carlos Subject: Text Box Date: 12/14/2023 3:32:17 PM -07'00'

Per ECM Administrator Old Ranch Road is classified as a Rural Local Gravel road presently. Intersection spacing is 330 feet. Please revise statement and analysis to meet intersection spacing for a rural local gravel road.

Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:29:54 AM  
LSC Response: Revised as requested.

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Number: 2 Author: Carlos Subject: Callout Date: 12/14/2023 3:31:45 PM -07'00'

Please revise to "Rural Major Collector" and clarify this classification is from the 2040 Major Transportation Corridors Plan.

Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:30:22 AM  
LSC Response: Revised as requested.

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Number: 3 Author: Carlos Subject: Highlight Date: 12/14/2023 3:31:36 PM -07'00'

. Intersection spacing for Urban Collectors is 330 or 660 feet, depending on the situation. Old Ranch Road currently functions like a local roadway rather than a collecto

Number: 4 Author: Carlos Subject: Highlight Date: 12/14/2023 3:31:31 PM -07'00'

Urban Collectors is 330 or 660 feet, depending on the situation

Number: 5 Author: Carlos Subject: Highlight Date: 12/14/2023 3:31:50 PM -07'00'

Urban Collecto

Number: 6 Author: Carlos Subject: Callout Date: 12/14/2023 3:37:03 PM -07'00'

State what the criteria requires for this intersection.

Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:30:54 AM  
LSC Response: Added as requested.

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Please state where in the ECM this criteria is from. Table 2-17 shows a design stopping sight distance of 155 feet for a 25 mph road. Revise calculations if needed.

applicable). The following are the existing sight-distance measurements. The line of sight is from the driver's eye height of an approaching vehicle (3.5 feet) to a height of 3.5 feet at the center of the proposed access.

- Site Access/Old Ranch Road intersection:
- At least 850 feet to the site access on the eastbound approach, west of the site.
- 600 feet to the site access on the westbound approach, east of the site. The 600-foot distance is assumed to be from a driver's eye location 45 feet west of the west edge of the traveled way of Black Forest Road.

The intersection will have a required sight distance of 335 feet assuming a posted speed limit of 25 miles per hour (mph). The proposed subdivision road/access intersection with Old Ranch Road is anticipated to meet the required minimum sight distance in both directions. The required intersection line-of-sight "triangles" should be maintained and free of site improvements (that would limit the line of sight needed to maintain the prescribed sight distance).

### ROAD AND TRAFFIC CONDITIONS

Figure 1 shows the roads adjacent to and in the vicinity of the site. Adjacent roads serving the site are identified below followed by a brief description of each:

"Rural"<sup>3</sup>

**Black Forest Road** is a two-lane minor arterial. The roadway extends from just south of Woodmen Road north to the county line. The intersection with Old Ranch Road is stop-controlled. The roadway is planned for improvements between Hodgen Road and Stapleton Drive per the 2016 *Major Transportation Corridors Plan (MTCP)*. The posted speed limit is 55 miles per hour (mph) approaching Old Ranch Road in the northbound direction and drops to 40 mph immediately prior to the intersection. In the southbound direction the speed limit is 40 mph.

Rural local<sup>4</sup>

**Old Ranch Road** is a two-lane, approximately 28-foot-wide gravel roadway (in the vicinity of the site) which extends approximately 5,700 feet to the west from Black Forest Road where it ends at the intersection with Forest Drive. The El Paso County Road Book (2019) identifies this segment of Old Ranch Road as a County-maintained, 30-foot-wide gravel roadway with 60 feet of right-of-way. The posted speed limit is 25 mph. The functional classification as listed in the Road Book is "Urban Area - Local" and the administration classification is "Secondary Service." The *MTCP* 2040 classification of Old Ranch Road, according to County staff, is *Rural Major Collector* (and shown as a *Collector* on Map 14 of the *MTCP*).

*MTCP* Map 7 and Map 11 (Gravel Road Analysis – existing and 2040, respectively), show this section of Old Ranch Road as "Adequate." Therefore, the roadway existing/baseline condition should not be considered "deficient" as it does not appear that significant changes have occurred, with respect to trip loading to Old Ranch Road, since the adoption of the *MTCP*.

Approximately one mile west of the end of Old Ranch Road, there is another segment of Old Ranch Road that extends from Milam Road to west of Voyager Parkway. This western segment of Old

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Number: 1 Author: Carlos Subject: Callout Date: 12/14/2023 3:36:33 PM -07'00'

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Please state where in the ECM this criteria is from. Table 2-17 shows a design stopping sight distance of 155 feet for a 25 mph road. Revise calculations if needed.

Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:31:27 AM

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LSC Response: This has been removed (the 335' sight dist. requirement applies to entering sight distance and this has been added to the previous paragraph). The applicable 200' SSD criteria from Table 2-17 has been added to this section.

Number: 2 Author: Carlos Subject: Highlight Date: 12/14/2023 3:35:27 PM -07'00'

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The intersection will have a required sight distance of 335 feet assuming a posted speed limit of 25 miles per hour (mph)

Number: 3 Author: Carlos Subject: Callout Date: 12/14/2023 12:57:27 PM -07'00'

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"Rural"

Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:31:48 AM

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LSC Response: Updated in the revised TIS.

Number: 4 Author: Carlos Subject: Callout Date: 12/14/2023 3:37:37 PM -07'00'

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Rural local

Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:32:05 AM

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LSC Response: Updated in the revised TIS.

1  
2 6  
Please verify ADT.  
The conclusion  
states 38 trips.  
Revise conclusion if  
needed.

Based on the ITE estimate for the proposed residential development, the site could generate about 47 external vehicle trips on the average weekday. During the weekday morning peak hour, approximately 1 vehicle would enter, and 3 vehicles would exit the site. Approximately 3 entering vehicles and 2 exiting vehicles are projected for the weekday afternoon peak hour.

### **TRIP DIRECTIONAL DISTRIBUTION & SITE-GENERATED TRAFFIC**

Figure 5 shows the directional-distribution estimate for the proposed development. This assumes almost all trips are oriented to/from the east.

Site-generated traffic volumes at the access intersection and at the intersection of Black Forest Road/Old Ranch Road have been calculated by applying the directional-distribution percentages estimated by LSC to the trip-generation estimates (from Table 1). Figure 6 shows estimates of the new site-generated traffic to be added to Old Ranch Road by the proposed subdivision and turning movements added to the Old Ranch Road/Black Forest Road intersection. It is important to note that while the development of the subdivision will add trips to Old Ranch Road, the project will provide a benefit with the removal of two existing access points to Black Forest Road.

### **FUTURE TOTAL TRAFFIC VOLUMES**

#### **Short-Term (Existing-Plus-Site-Generated) Traffic Volumes**

Figure 7 shows the estimated short-term total traffic (existing traffic plus the projected new development (“build”) traffic volumes from Figure 6). These volumes assume Old Ranch Road prior to a possible future extension to Milam Road.

#### **2043 Projected Background Traffic Volumes**

Figure 8 shows the estimated long-term background traffic volumes. These volumes assume Old Ranch Road prior to a possible future extension to Milam Road. Future background traffic volumes are based, in part, on projections contained in the *Black Forest Road Widening Project Traffic Impact Study* – November 2019 (AECOM) – Prepared for the City of Colorado Springs. These volumes also include potential additional trips from the Koinonia Ranch Subdivision and one additional vacant lot along Old Ranch Road.

#### **2043 Projected Total Traffic Volumes**


Figure 9 shows the estimated long-term total traffic (2043 background traffic (Figure 8) plus the projected new site-generated traffic volumes (from Figure 6). These volumes assume Old Ranch Road **prior to** a possible future extension to Milam Road.

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Number: 1 Author: Carlos Subject: Callout Date: 12/14/2023 3:53:00 PM -07'00'

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Please verify ADT. The conclusion states 38 trips. Revise conclusion if needed.

 Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:32:34 AM  
LSC Response: Corrected in the revised TIS.

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As mentioned previously, there is not a current County project planned to connect the two segments of Old Ranch Road. Prior to this connection, all site-generated traffic, as well as all traffic generated by parcels accessing Old Ranch Road, will use the Old Ranch Road/Black Forest intersection. Note: These estimated area buildout volumes are included in the volumes shown in Figure 9.

The attached **Appendix Figure 1** shows the combined total projected new traffic on Old Ranch Road (prior to a possible future connection from Milam Road). This estimate includes total traffic for 10 new lots on Old Ranch Road: 5 lots within Koinonia Ranch, 4 lots for Nabulsi-Abushaban Subdivision, and development of an additional currently-undeveloped residential lot.

The projected buildout of the current Old Ranch Road “travel shed” area (total ADT adjacent to and just east of the site is anticipated to result in the design ADT of a Rural Gravel Roadway (200 vpd) being exceeded. Based on estimated ADT (based on ITE trip-generation rates) just west of Black Forest Road, both the background traffic (estimated) and post-development (site “build”) ADT would be about 275 vpd (over 200 vpd, but less than 300 vpd). This is based on ITE trip generation for ten single-family homes to the east with access to Old Ranch between the site and Black Forest Road (about 100 background trips generated).

The applicant would prefer Old Ranch Road to remain a gravel roadway. However, as the projected ADT on the east near Black Forest Road is projected to exceed 200 vpd, a deviation request would be required to keep the roadway gravel. A deviation request was recently submitted as part of the nearby Koinonia Ranch Subdivision. Recent indication by County staff on that submittal is that the deviation to keep Old Ranch Road gravel *will not be supported by staff* and as such, that applicant is being requested to *identify the fair share portion of paving that will be required* (Full Comment: *This deviation will not be supported by staff. Provide construction drawings in the next submittal that show the proportional share of Old Ranch Road from Black Forest Road paved per County standards. [the TIS comment reads] Note that per ECM 2.2.7.B.2, paving is required when the ADT of a road exceeds 200. Per the project scope, paving will be required because of this criteria. Please identify the fair share portion of paving that will be required.*)

The **new** development traffic (trips generated by the three new parcels created) is estimated to be generated by this project is estimated to be 28 vpd. For the segment between Black Forest Road and the proposed subdivision access, the total projected ADT is estimated to be 275 vpd. This project’s percentage of the total on this segment would be 10 percent. This project would not add trips to existing Old Ranch Road west of the site.


Please identify the fair share portion of paving that will be required for this subdivision. Calculate potential escrow alternative for paving as well. Provide the amount of paving required.

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 Number: 1    Author: Carlos    Subject: Text Box    Date: 12/14/2023 3:44:12 PM -07'00'

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Please identify the fair share portion of paving that will be required for this subdivision. Calculate potential escrow alternative for paving as well. Provide the amount of paving required.

 Author: jchodsdon    Subject: Sticky Note    Date: 7/15/2024 10:32:52 AM  
LSC Response: This comment has been addressed in the revised TIS report.

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1  
State what the ECM criteria threshold for turn lane requirements is (both left and right turn lanes). State what the total traffic (including this development and other developments) turning on to Old Ranch Road is.

### **AUXILIARY TURN LANE NEEDS ANALYSIS**

No additional auxiliary lanes are necessary with this proposed development.

As shown, all parcels with access to Old Ranch Road, including the proposed development, are projected to generate less than 25 vehicles inbound or outbound during the peak hours. This indicates that with the current configuration of Old Ranch Road, no thresholds for auxiliary lanes would be met at the intersection of Old Ranch Road/Black Forest Road, with or without the proposed development. As indicated above, three years of crash history were analyzed at the intersection of Old Ranch Road/Black Forest Road. Only one crash was recorded during the study period, which was a rear-end crash that did not result in any injuries.

### **MTCP ROADWAY IMPROVEMENTS**

The *2016 El Paso County Major Transportation Corridor Plan (MTCP)* shows that Black Forest Road between Hodgen Road and Stapleton Drive is identified for “rural road upgrade” – MTCP project ID U11.

### **INTERNAL STREET CLASSIFICATIONS**

The proposed subdivision road is proposed to be a private, gravel roadway.

### **MULTI-MODAL AND PEDESTRIAN/BIKE TRANSPORTATION**

As shown on *Map 15: Bicycle and Pedestrian Network and Improvements* of the MTCP, a proposed bicycle route is shown on Old Ranch Road west of Black Forest Road.

### **PEDESTRIAN AND BICYCLE ACCOMMODATION**

There are currently no sidewalks, bike lanes, or trails in the vicinity of the site. The subdivision road will be a rural gravel road and sidewalks are not required.

### **COUNTY ROAD IMPROVEMENT FEE PROGRAM**

This subdivision will be required to participate in the Countywide Road Impact Fee program. The applicant has selected the “opt-out” option. The fee obligation per residential dwelling unit will be payable at the time of the building permit. This fee amount per dwelling unit is \$3,830.00. Based on three (3) new homes, the total “full fee,” payable at platting or building permit would be \$11,490. Note: program fees are subject to change.

### **REIMBURSABLE MTCP IMPROVEMENTS**

Old Ranch Road is shown as a “Collector” on the MTCP and could potentially be added to the MTCP reimbursable project list in the future (potentially, as part of the current update to the

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☰ Number: 1 Author: Carlos Subject: Text Box Date: 12/14/2023 3:47:46 PM -07'00'

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State what the ECM criteria threshold for turn lane requirements is (both left and right turn lanes). State what the total traffic (including this development and other developments) turning on to Old Ranch Road is.

👉 Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:33:11 AM  
LSC Response: Added as requested.

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MTCP). There may be opportunity for fee program credit (based on roadway unit costs and pro-rated based on percent of total escrow contributed) if Old Ranch Road, instead of being paving to a 24-foot-wide “unimproved” roadway, were to be upgraded to a County standard Collector roadway. Any eligibility of Old Ranch Road and potential credit would need to be brought before the EPC Roadway Impact Fee Program Advisory Committee for review and approval.

A potentially reimbursable improvement project directly adjacent to the site is the Black Forest Road rural upgrade – *MTCP* project ID U11. Any ROW dedication as part of this subdivision may be eligible for credit. Any eligibility and potential credit would need to be brought before the EPC Roadway Impact Fee Program Advisory Committee for review and approval.

- U11 – Black Forest Road from Hodgen Road to Stapleton Drive (from Map 13 on the *MTCP*) (upgrade from 2-lane Rural Unimproved County Road to a 2-lane Minor Arterial (\$11,691,000))

## DEVIATIONS

No deviation requests are being submitted with this application.

1  
A deviation request for the subdivision's private road is included in the application. Please revise statement and discuss deviation.

## FINDINGS AND CONCLUSIONS

### Trip Generation

- The development is expected to generate approximately 38 new vehicle trips on the average weekday, with approximately 4 trips occurring during the morning peak hour and 6 trips during the evening peak hour.
- The **net new** daily trip generation by three newly-created lots, with three new single-family homes, would be 28 trips per day.

### Auxiliary Turn Lanes

- No additional auxiliary lanes are required for the proposed development.

### Intersection Levels of Service

- Please refer to the “Level of Service” section above for detailed LOS analysis results for individual turning movements and approaches at the studied intersections, during both peak hours through the 2043 horizon year.


### Access and Internal Street Classification

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Number: 1 Author: Carlos Subject: Callout Date: 12/14/2023 1:04:46 PM -07'00'

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A deviation request for the subdivision's private road is included in the application. Please revise statement and discuss deviation.

 Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:33:30 AM  
LSC Response: Revised as requested.

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- The subdivision access is proposed to a new access intersection Old Ranch Road. Note: The proposed subdivision would **remove** two existing access points from Black Forest Road. This would be a benefit to the County with respect to access management/*ECM* access criteria for this Minor Arterial roadway.
- The proposed subdivision road is proposed to be a private, gravel roadway.

### Old Ranch Road

- Based on estimated ADT (based on ITE trip generation rates) just west of Black Forest Road both the background traffic (estimated) and post-development (site “build”) ADT would be about 275 vpd (over 200 vpd, but less than 300 vpd).
- A deviation request was recently submitted as part of the nearby Koinonia Ranch Subdivision. Recent indication by County staff on that submittal is that the deviation to keep Old Ranch Road gravel *will not be supported by staff* and as such, **that** applicant is being requested to *identify the fair share portion of paving that will be required*. We presume that Staff will indicate a similar requirement for this applicant.
- This project’s percentage of the total on this segment would be 10 percent. This project would not add trips to existing Old Ranch Road west of the site.

Please comment on page 8 of this report and revise statement with analysis conclusion. <sup>1</sup>

### Roadway Impact Fee Program

Please refer to the report sections above for estimated fee program amounts and potential for fee program credit.


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Number: 1 Author: Carlos Subject: Callout Date: 12/14/2023 3:52:14 PM -07'00'

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Please comment on page 8 of this report and revise statement with analysis conclusion.

 Author: jchodsdon Subject: Sticky Note Date: 7/15/2024 10:33:49 AM  
LSC Response: The updated TIS addresses this comment.

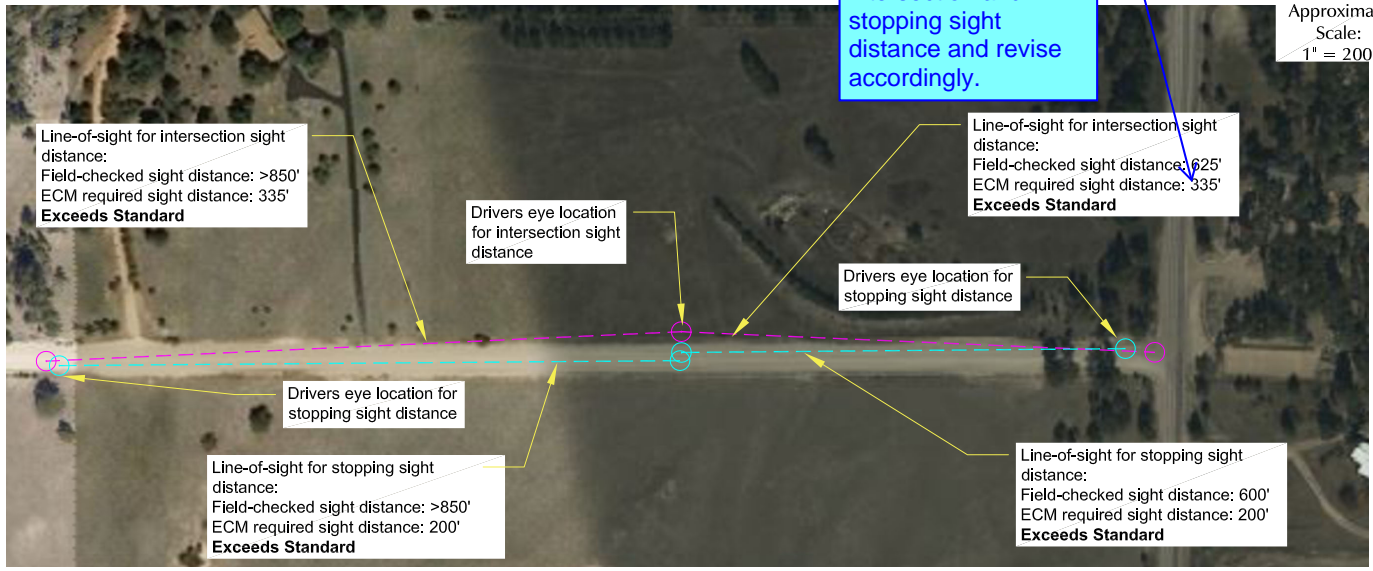
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Approximate Scale: 1" = 200'

1 Please see comment regarding line of sight distance for intersection and stopping sight distance and revise accordingly.



Design Speed used in this evaluation: 30mph on Old Ranch Road

ECM Criteria (Section 2.3.6):  
Intersection Sight Distance: ECM Table 2-21  
Stopping Sight Distance: ECM Table 2-17

LEGEND:

- - - Field-checked lines-of-sight for intersection sight distance
- - - Field-checked lines-of-sight for stopping sight distance



Figure 3  
Estimated Sight Distance Evaluation  
Nabulsi-Abushaban Subdivision (LSC# S224340)

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 Number: 1    Author: Carlos    Subject: Callout    Date: 12/14/2023 3:54:21 PM -07'00'

Please see comment regarding line of sight distance for intersection and stopping sight distance and revise accordingly.

 Author: jchodsdon    Subject: Sticky Note    Date: 7/15/2024 10:34:13 AM

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LSC Response: This figure is correct. The narrative has been revised per the comment above.